RIVER STAGES AND FLOODS FOR APRIL 1948

ELMER R. NELSON

River stages during April were above normal east of the Mississippi River except in the New England States and at a few widely scattered points. The greatest departure was along the lower Ohio River, where the stages ranged from 12 to 16 feet above normal. West of the Mississippi River, stages were slightly above normal in the North-Central States and along the Pacific Coast.

Most severe flooding during the month occurred in the Ohio Basin, the Red River of the North Valley, southern Georgia, and northern Florida. Record stages were recorded on the Licking River in Kentucky. In the Red River Valley flooding was the greatest in 50 years.

The total precipitation recorded in the United States during April 1948, and the departure from normal is given in Chart V at the end of this issue.

Hudson Bay drainage.—The severe flooding along the Red River of the North, at and below Grand Forks, N. Dak., during April 1948, was due to the melting of an unusually deep snow cover of high water content. The crest of 41.6 feet at Grand Forks was nearly 1 foot higher than the crest of 1947 (40.7). Downstream from Grand Forks the flood was the highest since 1897, and perhaps even higher. A strip 8 miles in width was virtually all under water with the exception of a few high spots and highways which had been upgraded. Much of the damage at Grand Forks and East Grand Forks was due to the fact that the two cities are built up close to the banks.

Grafton, N. Dak., on the Park River and Minto, N. Dak., on the Forrest River, both cities located some distance from the Red River, were flooded as a result of the rapid melting of the heavy dense snow cover over the two sub-basins.

On March 1, the snow cover at Petersburg, N. Dak. (west of Grand Forks, N. Dak.)was 46 inches deep and at Hillsboro, N. Dak., and points farther west, 40 inches. East of Grand Forks, at Red Lake Falls, Minn., and Fosston, Minn., the snow was 36 and 30 inches deep, respectively. North of the Petersburg, N. Dak.-Fosston, Minn., line to the Canadian border a similar or heavier snow cover was observed. South of Fargo-Moorhead, the snow depths were generally 24 inches, with 36 inches reported in one small area to the southwest. Snowfall accumulation during most of the winter was above normal, with the depth at the end of November at Fargo-Moorhead, 14.6 inches; on December 31, 15.3 inches; on January 31, 14.8 inches; on February 29, 23 inches; and on March 7, 25.2 inches.

The condition of the ground seemed favorable for less flooding than maximum, as the first snow during the season fell on comparatively dry ground with only a few inches of frost. The frost penetration, beneath the snow cover on March 1 was generally from 6 to 12 inches. This favorable condition did lessen run-off from the southern and central portions of the Valley, as considerable infiltration took place.

The break-up, though favorable for many areas in that it moved northward gradually as several late freezes occurred, was unfavorable for Grand Forks and areas farther north, as seasonal temperatures by the time the break-up reached Grand Forks were high so that melting took place rapidly.

The crest at Fargo-Moorhead was only 3 feet above flood stage and caused only a small amount of damage. Flood stage was not reached at Wahpeton-Breckenridge.

Atlantic Slope drainage.—Light to moderate flooding occurred generally along the Atlantic Slope from New Hampshire to Georgia during the first few days of April and at scattered points during the rest of the month. This general flooding was caused by the heavy rains that resulted from the passage of the cold front and squall line associated with the low pressure system that moved across the Great Lakes Region on the night of March 31–April 1.

The run-off from moderate rain and snow melt caused a moderate rise in the rivers of Maine and New Hampshire on the 3d. The snow depth throughout Maine was above normal on April 1, but the water content was deficient. Practically no snow remained in New Hampshire after this peak had passed. At the end of March, as a result of warm rains and melting snow, the Connecticut River was running full. Practically all the snow cover was depleted, but the ground was fairly well saturated with moisture. Moderately heavy rain (1–1.50 inches) on the 1st and 2d caused the river to rise to a stage of 2.1 feet above flood level at Hartford, Conn., on the 3d. The only damage reported was bank erosion.

The Rappahannock River rose sharply to near-flood stage from the heavy rain (average 1.83 inches) that occurred over the basin on the last day of March and the first day of April. Light flooding occurred in the Potomac Basin between the 14th and 17th, following the light to heavy rain that fell over the basin from the 11th to the 14th. Rainfall was heaviest over the headwaters of the Potomac, averaging 3.50 inches above Cumberland, Md., and 2 inches above Springfield, W. Va. No damage of consequence resulted.

Heavy rains concentrated over the Pedlar, Tye, Rockfish, Hardware, and Rivanna Rivers (3.05 to 3.56 inches) in Virginia during the late afternoon and the night of April 1, produced stages of 1–2 feet above flood stage in the James River by 8 a. m. on the 1st. Except for some slight inconvenience of moving from threatened dwellings, no damage of consequence was reported.

Minor flooding occurred in the Cape Fear, Neuse, and Roanoke Rivers in North Carolina from the heavy rain over the headwaters between March 31–April 1. The principal rises were in the upper reaches of the Roanoke River where the stage at Alta Vista, Va., rose from 6.9 feet on March 31 to 22.0 feet on the morning of April 1. The principal losses were to logging and fishing interests.

Heavy rains (1.50 to 2 inches) over South Carolina for the 36 hours March 31–April 1 caused light to moderate flooding in the principal streams in that State. Lowlands were flooded for a short time, but damage was light. One man was drowned in the Wateree River below Camden, S. C.

Exceedingly heavy rainfall from March 31–April 1 produced rapid rises in the streams in the lower part of Georgia. The total rainfall for the 2 days ranged from 5 inches to as much as 15 inches south of the Albany-Lumber City line to slightly less than 2 inches above this section. The lower portions of the Ocmulgee and Oconee Rivers and upper Altamaha River crested 5 to 10 feet or more above flood stage. Most of the damages were due directly to torrential rains rather than to the resulting overflows.

East Gulf of Mexico drainage.—Light to moderate flooding occurred from southern Georgia and Florida to Louisiana during the month.

Heavy to excessive rains over southern Georgia and Florida during the period March 31–April 2 caused moderate flooding on the Flint, Apalachicola, and Choctawhatchee Rivers. The heaviest rain occurred over the lower Flint and upper Apalachicola Basins, with storm totals of 10 to 15 inches. Rainfall over the Choctawhatchee River Basin averaged about 7.75 inches. The Flint and Apalachicola Rivers crested 4 to 8 feet above flood stage, and the lower Choctawhatchee, slightly over 1 foot

above flood level. Farm lands were flooded and badly washed; highways and railroad lines were washed out in many sections and made impassable; numerous towns and communities were flooded to some extent, and some evacuation work was necessary along the Flint and Apalachicola Rivers. Along the Choctawhatchee River some damage was done to recently planted crops. Most of the damage was to highways and bridges.

A general rise occurred in the Tombigbee and the Warrior Rivers in Alabama on the 13th, following heavy rains on the 13th and 14th that averaged 1.25 inches over the upper Warrior Basin, 1.50 inches over the upper Tombigbee Basin and 1.75 inches over the lower Tombigbee area. Moderate flooding resulted on the Lower Tombigbee and on the Warrior at Eutaw, Ala. Damage was small and was confined mostly to lumbering operations.

Moderate flooding occurred on the Pearl River in Mississippi and Louisiana as a result of the excessive rain over the basin during the night of April 12–13. Little damage resulted from this overflow as most stations had just recently receded within the banks from a previous prolonged flood.

Upper Mississippi and Missouri Basins.—Moderate flooding occurred in the Upper Mississippi River and in the Illinois and Rock Rivers in Illinois during the latter part of March and the first week of April due to snow melt and the heavy rains of March 16, 19, and 26.

Light flooding occurred in the Missouri River at Nebraska City, Nebr., between the 8th and 9th.

Ohio Basin.—A major flood occurred on the Ohio River from April 13 to 30, from Pittsburgh, Pa., to Cairo, Ill. The rise was very rapid with rises of 16.8 feet at Parkersburg, W. Va., and 19.4 feet at Dam No. 22 near Ravenswood, W. Va., during the 24-hour period ending at 7 a. m., on April 13. This was the highest flood that has occurred on the Ohio so late in the spring and the highest since March 1945. Flood stage was exceeded for the first time since 1945 at Pittsburgh. A comparison of the crests at representative cities along the Ohio with the ones in 1945 and the highest of record are given in Table 1.

The Ohio River at Cincinnati, Ohio, has been in flood 61 times during the 90-year period beginning in 1859. During that period 17 major floods with crests 60 feet or higher have occurred. All of these major floods crested during the first 4 months of the year, five each in February and March, four in January, and three in April. During the 90-year period, the Ohio River has exceeded the 64-foot level seven times.

TABLE 1.—*Comparative Ohio River crests*

Station	Flood stage	1948 crest	1945 crest	Highest crest of record	
				Crest	Year
	Feet	*Feet*	*Feet*	*Feet*	
Pittsburgh, Pa.	25	29.8	33.4	46.0	1936
Wheeling, W. Va.	36	44.2	47.3	55.2	1936
Parkersburg, W. Va.	36	47.9	48.5	58.9	1913
Point Pleasant, W. Va.	40	55.4	53.0	62.8	1913
Huntington, W. Va.	50	61.7	59.9	69.4	1937
Portsmouth, Ohio	50	64.1	64.9	74.2	1937
Cincinnati, Ohio	52	64.8	69.2	80.0	1937
Louisville, Ky.	28	41.0	47.1	57.1	1937
Evansville, Ind.	42	45.6	48.3	53.75	1937
Paducah, Ky.	39	43.6	50.5	60.6	1937
Cairo, Ill.	40	51.6	53.9	59.5	1937

Severe flooding also resulted in the various tributaries in Kentucky, West Virginia, and southern Ohio, with maximum stages of record recorded on the Licking River at Falmouth, Ky., and on the South Fork at Cynthiana, Ky. The crest at Falmouth, Ky., was 0.4 foot above the maximum stage of record, established January 23, 1937; and at Cynthiana, 0.7 foot above the highest stage, established December 24, 1921. The crest at Chillicothe, Ohio, on the Scioto River, was the highest in 3 years, and at Piketon, Ohio, the highest in 4 years. Other tributaries in which flood stages were observed are included in the table at the end of this report.

The spring flood of 1948 was caused by three rainy periods during the first half of April. Light rains occurred on the 1st and 2d, and moderate amounts fell from the 6th to the 9th. The rainfall during these two periods caused the streams to rise to one-half to three-fourths bankful stage. The stages had not returned to normal when the third rainy period began. The rainfall which contributed chiefly to the Ohio River flood began April 11, and continued intermittently moderate to heavy until the morning of April 15. Rainfall was heaviest in central and northern Ohio and West Virginia causing the Ohio and its tributaries to rise rapidly to flood stage. When the last rain period began, the Ohio River was in pool above Gallipolis Dam, W. Va., a factor which helped considerably in preventing a more serious flood in the eastern section of the basin. Below Gallipolis moderate stages were continuing from a rise that had developed earlier in April. Table 2 gives a few storm totals for the period April 11–15 for selected stations where totals exceeded 5 inches.

TABLE 2.—*Comparative precipitation, April 11–15, in the Ohio River Basin*

[Storm total in inches]

Station	Storm total	Station	Storm total
Creston, W. Va.	6.45	Dam 19, Ohio River	5.34
Dam 32, Ohio River	6.12	Dam 30, Ohio River	5.32
Berea, Ky.	6.12	Dam 34, Ohio River	5.29
Dam 33, Ohio River	5.84	Lock 4, Kentucky River	5.29
Chillicothe, Ohio	5.72	Dam 17, Ohio River	5.23
Frankfort, Ky.	5.65	Parkersburg, W. Va.	5.22
Athens, Ohio	5.55	Dam 20, Ohio River	5.12
Flemingsburg, Ky.	5.52	Dam 21, Ohio River	5.12
Cynthiana, Ky.	5.50	Dam 16, Ohio River	5.11
Dam 23, Ohio River	5.48		

White, Arkansas, and Red Basins.—Minor flooding occurred on the White, Petit Jean, Black, and Ouachita Rivers during April. The flood on the lower White River was a continuation of the flood from March. The damage along this river was unusually small due to levee protection. Along the other rivers it was also minor, resulting mostly in the retardation in preparation of ground for crops.

Lower Mississippi and Atchafalaya Basins.—Moderate rains fell over the St. Francis River Basin on March 22, 26–27, and 31. The river passed above flood stage at St. Francis, Ark., and at Fisk, Mo. Heavy rains, averaging 2 inches over the basin, fell on April 12–13, causing the river, which had fallen below flood stage at Fisk to rise again and crest at 20.8 ft. at that point on the 16th, and 19.4 ft. at St. Francis, Ark., on the 18th. No damage was reported.

The Tallahatchie and Yazoo Rivers continued to fall slowly during April from the peak crests reached in February and March. The Yazoo had fallen below flood stage at Greenwood, Miss., by the 8th but continued above flood stage at Yazoo, Miss., throughout the month.

The Mississippi River rose above flood stage at Caruthersville, Mo., on February 21, due to the heavy rains over the Ohio Basin near the middle of February. It crested at 34.7 feet on February 26–27 and went below flood stage on March 15. The Mississippi River rose again

above flood stage at Caruthersville on March 25, from the heavy rains over the Ohio on March 16 and March 22–23. It crested at 39.3 feet on April 4–5. Another rise occurred after the heavy rains on the Ohio before the middle of the month, going below flood stage on May 3.

Flood stage or slightly higher was reached at Red River Landing and Baton Rouge, La., on the lower Mississippi, and at Melville, Atchafalaya, and Morgan City, La., on the Atchafalaya. Morgan City stages are greatly affected by tides and winds, and the flood stage at that point was reached or exceeded during some part of each day from April 11–16 and April 20–30, inclusive. Monroe, La., on the Ouachita River was above flood stage from March 18–April 10.

West Gulf of Mexico drainage.—Heavy rains fell over the central and lower Sabine Basin from April 13–15. The heaviest rains amounted to nearly 6 inches and were centered near Milam, Tex. Moderate rises occurred on the Sabine River with light flooding only in the lower reaches.

Slight flooding occurred in the Animas River in Colorado and at two stations on the Rio Grande, as a result of melting snow, but no damage resulted.

Sacramento River Basin.—A substantial rise occurred in the Sacramento River during the last half of April as a result of frequent rains, but no flood stages were reached.

The Sierra region had an abundance of late seasonal snowfall. Norden, Calif., near Donner Summit, had 102 inches of snow pack on the 11th, and Blue Canyon, 48 inches. On the 15th and 16th a storm from the southern Pacific brought in warm, moist air that produced heavy rains over the snowfall. The resulting run-off from rain, plus continued melting of snow for 3 or 4 days after the weather cleared, caused the already well-loaded Sacramento River to accumulate excessive water in the Knights Landing-Verona section. Consequently, overflow was started at Fremont Weir into Yolo Bypass. The maximum overflow depth there was 1.3 feet on the 19th. At nearby Knights Landing, the highest river stage was 36.6 feet, 1.4 feet below flood stage.

The Yolo Bypass road to Woodland, Calif., was closed for two days beginning on the 19th. Water continued to flow over Fremont Weir for about a week and spread over one-half or more of the Yolo Bypass flood-control basin. The bypass lands are usually flooded more or less during the midwinter rainy season, and no farming is done on these unprotected lands until after the water drains off in the spring. This year, however, with the winter season almost rainless, more than usual planting of the bypass lands resulted. Several thousand acres of grain and rice land were inundated from the heavy April rains, and the crops will be almost a total loss, as the water is slow in draining off these lands.

FLOOD STAGE REPORT FOR APRIL 1948

[All dates in April unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
HUDSON BAY DRAINAGE					
Red of North:	*Feet*			*Feet*	
Moorhead, Minn.	17	8	12	18.0	10
Grand Forks, N. Dak.	28	8	29	41.6	17
ST. LAWRENCE DRAINAGE					
Lake Huron					
Flint: Columbiaville, Mich.	10	1	9	12.6	3
		11	17	11.4	15
Lake Erie					
St. Marys: Decatur, Ind.	13	13	19	17.3	16
St. Joseph: Montpelier, Ohio	10	2	2	10.2	2

See footnotes at end of table.

FLOOD STAGE REPORT FOR APRIL 1948—Continued

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
Pemigewasset:	*Feet*			*Feet*	
Woodstock, N. H.	10	1	1	10.0	1
Plymouth, N. H.	11	1	2	13.0	2
				24.5	Mar. 24
Connecticut: Hartford, Conn.	16	Mar. 21	5	19.2	Mar. 29
				18.1	3
Delaware: Easton, Pa.	22	Mar. 23	Mar. 23	22.3	Mar. 23
West Branch:					
Williamsport, Pa.	20	15	15	20.6	15
Lewisburg, Pa.	18	15	16	20.0	15
Little Juniata: Spruce Creek, Pa.	7	12	15	9.0	12
				9.6	14
South Branch: Springfield, W. Va.	15	14	14	15.9	14
Potomac: Washington (near), D. C.	10	16	16	10.7	16
James:					
Bremo Bluff, Va.	19	1	2	25.0	1
Columbia, Va.	18	1	3	27.6	2
State Farm, Va.	12	1	3	18.0	2
Richmond, Va.	8	2	3	13.3	2
Dan: Danville, Va.	11	1	1	11.8	1
Roanoke:					
Alta Vista, Va.	10	1	2	22.0	1
Randolph, Va.	21	2	3	24.6	3
Weldon, N. C.	31	3	5	39.2	4
Scotland Neck, N. C.	28	4	11	31.2	5
Williamston, N. C.	10	Feb. 10	24	11.1	Mar. 15
				11.5	8
Neuse:					
Neuse, N. C.	14	3	4	14.8	4
Smithfield, N. C.	13	4	5	14.1	5
Cape Fear: Lock No. 2, Elizabethtown, N. C.	20	3	5	23.7	4
Pee Dee:					
Cheraw, S. C.	30	2	3	33.8	3
Pee Dee, S. C.	19	Mar. 31	18	22.1	7
Saluda:					
		1	2	6.5	1
Pelzer, S. C.	6	4	4	6.0	4
		8	8	6.0	8
Chappells, S. C.	13	1	3	19.6	1
Broad: Blairs, S. C.	14	1	2	18.5	2
Catawba:					
Catawba, N. C.	8	1	1	8.5	1
Catawba, S. C.	11	1	2	13.5	1
Wateree: Camden, S. C.	23	1	3	28.0	2
Edisto:					
		1	8	9.3	2
Orangeburg, S. C.	8	13	14	8.2	13
Givhans Ferry, S. C.	10	Mar. 1	21	14.3	6–7
Savannah: Butler Creek, Ga.	21	2	3	22.9	3
Ogeechee:					
		2	8	6.9	3
Midville, Ga.	6	11	11	6.0	11
Dover, Ga.	7	Jan. 21	21	9.9	5
Ocmulgee:					
Macon, Ga.	18	2	2	18.0	2
				14.2	Mar. 14
Abbeville, Ga.	11	Mar. 9	17	12.7	Mar. 24
				12.9	Mar. 31
				13.8	8
Lumber City, Ga.	12	1	(2)	18.8	3
Oconee:					
Milledgeville, Ga.	20	2	3	23.1	2
Mount Vernon, Ga.	16	Mar. 31	11	17.5	8
Altamaha:					
				20.7	Feb. 21
Charlotte, Ga.	12	Jan. 25	24	20.1	Mar. 18–19
				21.8	4
				20.7	Mar. 18–19
Piney Bluff, Ga.	17	Feb. 10	21	21.9	5
Doctortown, Ga.	10	3	6	10.0	3–6
EAST GULF OF MEXICO DRAINAGE					
Flint:					
Albany, Ga.	20	2	5	27.9	2
Bainbridge, Ga.	25	2	12	33.3	5
Apalachicola:					
Chattahoochee, Fla.	20	2	11	24.1	5
				21.0	Feb. 15–16
Blountstown, Fla.	15	Jan. 25	28	22.1	Mar. 12
				20.7	Mar. 28
				22.8	6
Choctawhatchee: Carryville, Fla.	12	2	7	13.4	2
Etowah: Cartersville, Ga.	18	Mar. 24	Mar. 24	18.0	Mar. 24
Black Warrior: Eutaw, Ala.	35	16	18	38.2	17
Tombigbee:					
				54.3	Mar. 1
		Feb. 9	7	56.1	Mar. 11–12
Lock No. 4, Demopolis, Ala.	39			47.1	Mar. 30
		14	22	47.9	18
				56.9	Mar. 1
Lock No. 3	33	Jan. 31	24	57.4	Mar. 8
				49.6	Mar. 25
				49.7	19
				59.0	Mar. 1, 4
		Feb. 10	7	59.5	Mar. 8
Lock No. 2	46			52.0	Mar. 25
		15	22	51.1	19

FLOOD STAGE REPORT FOR APRIL 1948—Continued

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
EAST GULF OF MEXICO DRAINAGE—con.					
Tombigbee—Continued	*Feet*			*Feet*	
Lock No. 1	31	Feb. 11	25	42.7	Mar. 8
				35.0	21–22
Pearl:					
Jackson, Miss	18	15	26	23.9	21
Pearl River, La	12	Feb. 13	5	17.7	Mar. 7
		18	29	13.7	21
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Rock: Moline, Ill	10	Mar. 16	6	14.5	Mar. 23
Illinois:					
Peru, Ill	17	Mar. 19	2	23.5	Mar. 20
Peoria, Ill	18	Mar. 20	6	22.2	Mar. 24
Havana, Ill	14	Mar. 19	19	19.8	Mar. 24
Beardstown, Ill	14	Mar. 20	21	21.6	Mar. 31
Mississippi:					
Fort Ripley, Minn	10	26	[3]	10.7	29–30
Gordons Ferry, Iowa	13	Mar. 31	1	13.0	Mar. 31–Apr. 1
Grafton, Ill	18	Mar. 22	6	25.2	Mar. 27
St. Louis, Mo	30	Mar. 23	1	34.6	Mar. 27
Chester, Ill	27	Mar. 24	4	32.7	Mar. 28
Cape Girardeau, Mo	32	Mar. 23	7	37.8	Mar. 29
Missouri Basin					
Missouri: Nebraska City, Nebr	15	8	9	15.9	9
Ohio Basin					
Allegheny:					
Olean, N. Y	10	15	15	11.2	15
Lock No. 8 near Mosgrove, Pa	24	Mar. 22	Mar. 25	30.0	Mar. 23
		15	15	24.2	15
Lock No. 5, Schenley, Pa	24	13	16	25.2	13
				27.7	15
Lock No. 4, Natrona, Pa	[3] 19.5	14	15	20.5	15
Lock No. 3, Acmetonia, Pa	[3] 20	14	15	20.4	15
Tygart: Daily, W. Va	9	13	14	10.5	14
West Fork: Weston, W. Va	17	13	13	17.9	13
Monongahela:					
Lock No. 7, Greensboro, Pa	[3] 21	12	15	23.1	13
Lock No. 6, Rices Landing, Pa	19.5	13	15	22.7	13
Lock No. 4, Charleroi, Pa	[3] 23	12	15	29.3	14
Muskingum:					
Lock No. 7, McConnellsville, Ohio	22	13	15	23.1	15
Lock No. 3, Lowell, Ohio	25	14	17	29.2	15
Little Kanawha:					
Glenville, W. Va	23	13	15	27.6	13
Creston, W. Va	20	13	15	26.9	14
Hocking:					
Enterprise, Ohio	12	13	15	17.0	14
Athens, Ohio	17	12	16	21.8	13
Greenbrier: Renick, W. Va	17	14	14	17.0	14
Olentangy: Delaware, Ohio	9	13	14	10.3	13
Scioto:					
LaRue, Ohio	11	7	7	12.0	7
		13	15	12.5	14
Prospect, Ohio	10	13	16	11.8	15
Circleville, Ohio	14	13	17	19.7	14
Chillicothe, Ohio	16	14	17	22.4	15
Piketon, Ohio	15	13	18	26.5	14
Little Miami: Kings Mills, Ohio	17	12	12	17.2	12
South Fork: Cynthiana, Ky	20	13	14	23.3	13
Licking:					
Farmers, Ky	25	13	16	41.8	14
Falmouth, Ky	28	13	16	41.8	14
Kentucky:					
Lock No. 10, Ford, Ky	20	13	16	24.0	15
		Mar. 29	Mar. 29	20.1	Mar. 29
Lock No. 9, Valley View, Ky	20	9	10	20.8	9
		13	17	28.7	15
Lock No. 7, Highbridge, Ky	30	14	14	30.7	14
Lock No. 5, Tyrone, Ky	20	13	17	34.8	15
Lock No. 4, Frankfort, Ky	31	14	16	35.1	15
Lock No. 2, Lockport, Ky	40	14	17	43.5	15
Rough: Dundee, Ky	25	1	1	25.3	1
		15	18	27.2	16
Green:					
Munfordville, Ky	28	13	18	41.6	15
Lock No. 6, Brownsville, Ky	28	Mar. 29	Mar. 29	28.5	Mar. 29
		13	19	39.7	16

See footnotes at end of table.

FLOOD STAGE REPORT FOR APRIL 1948—Continued

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
MISSISSIPPI RIVER—continued					
Ohio Basin—Continued	*Feet*			*Feet*	
Green—Continued		Mar. 18	Mar. 19	33.4	Mar. 19
Lock No. 4, Woodbury, Ky	33	Mar. 27	1	38.3	Mar. 30
		14	20	40.8	17
Lock No. 2, Rumsey, Ky	34	Feb. 16	Mar. 6	41.1	Mar. 23
		Mar. 27	7	38.9	3
		14	28	40.6	22
West Fork:					
Anderson, Ind	10	6	9	13.1	7
		12	15	14.1	14
Noblesville, Ind	14	8	9	14.7	8
		15	15	14.9	15
Spencer, Ind	14	Mar. 25	1	20.0	Mar. 28–29
		8	18	19.2	9
				18.1	16
Elliston, Ind	18	Mar. 24	3	26.5	Mar. 30
		8	19	24.5	13
Edwardsport, Ind	12	Mar. 21	23	22.6	1
				21.7	14
				20.2	18
East Fork:					
Seymour, Ind	14	9	10	15.2	9
		13	15	16.0	13
Bedford, Ind	12.5	Mar. 27	4	22.6	Mar. 31
		10	21	23.9	17
Williams, Ind	10	Mar. 31	1	10.3	Mar. 31
		16	18	11.8	17
White:					
Petersburg, Ind	16	Mar. 27	6	23.1	2
		11	23	23.0	15
Hazleton, Ind	16	Mar. 27	8	24.3	2–3
		11	24	24.1	16
Wabash:					
Bluffton, Ind	10	14	16	11.6	15
Wabash, Ind	12	8	9	13.5	8
		14	16	16.4	14
Lafayette, Ind	11	1	2	12.6	1–2
		8	18	16.8	16
Covington, Ind	16	Mar. 22	3	21.9	Mar. 25
		8	19	20.2	17
Terre Haute, Ind	14	Mar. 22	21	21.2	Mar. 28
				18.5	9
				17.9	14
Vincennes, Ind	14	Mar. 27	24	23.3	1
				20.0	14
Mt. Carmel, Ill	17	Mar. 28	25	23.9	3
				22.9	17
New Harmony, Ind	15	Mar. 30	10	19.4	4–5
		13	25	18.3	18
Cumberland: Lock F, Eddyville, Ky	50	1	4	51.1	2–3
Tennessee: Kentucky Dam, Ky	31	Mar. 24	[2]	40.7	2
				39.2	16
				41.3	24–25
Ohio:					
Pittsburgh, Pa	25	13	16	29.8	15
Coraopolis, Pa	26	14	15	28.4	15
Dam No. 7, Midland, Pa	30	13	16	40.6	15
Dam No. 9, New Cumberland, W. Va	34	14	16	39.3	15
Dam No. 10, Steubenville, Ohio	36	14	16	41.0	15
Dam No. 12, near Wheeling, W. Va	36	13	17	44.2	15
Dam No. 13, near Wheeling, W. Va	45	15	16	47.4	15
Dam No. 14, Woodlands, W. Va	37	14	17	46.1	15
Dam No. 15	37	14	17	45.5	15
Dam No. 16	38	14	17	45.8	15
Dam No. 17	35.2	13	18	44.7	16
Dam No. 18	38	13	18	48.1	16
Marietta, Ohio, Lower Gage (Muskingum)	35	13	18	47.1	15
Parkersburg, W. Va	36	13	18	47.9	16
Dam No. 19, Little Hocking, Ohio	40	14	18	50.5	16
Dam No. 20, near Belleville, W. Va	45	15	18	50.9	16
Dam No. 21, Portland, Ohio	50	16	17	52.2	16
Dam No. 22, Ravenswood, W. Va	44	14	18	54.3	16
Dam No. 23, Racine, Ohio	45	14	19	56.7	16
Point Pleasant, W. Va	40	14	20	55.4	16
Gallipolis Dam, Hogsett, W. Va. Lower Gage	50	14	19	61.1	16
Dam No. 28, Huntington, W. Va	50	14	20	61.7	17
Dam No. 29, Ashland, Ky	51	14	20	65.3	17
Dam No. 30, near Greenup, Ky	52	14	21	65.6	17
Portsmouth, Ohio	50	14	21	64.1	17

FLOOD STAGE REPORT FOR APRIL 1948—Continued

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM—continued					
Ohio Basin—Continued					
Ohio—Continued	*Feet*			*Feet*	
Dam No. 32, near Vanceburg, Ky.	53	14	21	64.7	17
Dam No. 33, near Maysville, Ky.	50	14	22	64.0	17–18
Dam No. 34, Chilo, Ohio	49	14	22	61.2	18
Dam No. 35, New Richmond, Ohio	48	14	22	61.6	18
Dam No. 36, near Brent, Ky.	52	14	22	65.5	18
Cincinnati, Ohio	52	14	22	64.8	18
Dam No. 37, Fernbank, Ohio	50	14	23	64.1	18
Dam No. 39, Markland, Ind.	48	14	23	57.6	18
Madison, Ind.	46	13	23	56.5	18
Dam No. 41, Louisville, Ky.—					
Upper Gage	28	14	24	41.0	19
Lower Gage	55	14	24	68.0	19
Dam No. 43, Evans Landing, Ind.	57	13	24	69.0	19
Dam No. 44, Leavenworth, Ind.	53	Mar. 28	2	56.4	Mar. 30
		13	25	67.9	19
Dam No. 45, Addison, Ky.	47	Mar. 29	2	49.3	Mar. 31
		13	25	57.8	20
Tell City, Ind.	38	Mar. 28	4	42.6	Mar. 31
		12	26	49.0	20
Dam No. 46, Owensboro, Ky.	41	Mar. 31	2	41.6	1
		14	26	47.0	21
Dam No. 47, Newburgh, Ind.	38	Mar. 28	6	44.1	2
		12	28	48.1	22
Evansville, Ind.	42	15	27	45.6	21
Dam No. 48, near Henderson, Ky.	38	Mar. 28	7	43.7	2
		12	29	48.7	22–23
Mount Vernon, Ind.	35	Mar. 28	(2)	41.4	4
				47.1	23
Dam No. 49, Uniontown, Ky.	37	Mar. 29	(2)	43.7	5
				49.6	24
Shawneetown, Ill.	33	Mar. 26	(2)	44.1	5
				50.4	24
Dam No. 50, Fords Ferry, Ky.	34	Mar. 24	(2)	46.9	5
				52.9	23–24
Dam No. 51, Golconda, Ill.	40	Mar. 31	10	44.0	5
		14	30	48.1	23
Paducah, Ky.	39	Mar. 29	10	42.3	4
		13	30	43.6	24
Dam No. 52, Brookport, Ill.	37	Mar. 24	(2)	44.7	4
				45.5	24
Dam No. 53, near Mound City, Ill.	42	Mar. 23	(2)	51.6	2
				50.2	24
				51.6	3
Cairo, Ill.	40	Mar. 22	(2)	47.3	16–17
				47.9	23–25
White Basin					
White:					
Georgetown, Ark.	21	1	4	21.1	2–3
Clarendon, Ark.	26	Feb. 29	17	28.4	Mar. 8–14
St. Charles, Ark.	25	Mar. 1	26	26.9	Mar. 13–14
Arkansas Basin					
Petit Jean: Danville, Ark.	20	12	14	21.5	14
Red Basin					
Ouachita:					
Arkadelphia, Ark.	17	14	14	17.2	14
Camden, Ark.	26	Mar. 23	1	34.3	Mar. 26

FLOOD STAGE REPORT FOR APRIL 1948—Continued

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM—continued					
Red Basin—Continued					
Ouachita—Continued	*Feet*			*Feet*	
Monroe, La.	40	Mar. 18	10	40.2	Mar. 23,
				40.2	Mar. 24, 5–6
Black Rock, Ark.	14	13	20	17.3	14
Lower Mississippi Basin					
St. Francis:					
Fisk, Mo.	20	Mar. 31	7	22.8	3
		15	17	20.8	16
St. Francis, Ark.	18	Mar. 31	23	19.4	7–9
				19.4	18
Coldwater: Sarah, Miss.	18	14	14	18.2	14
Tallahatchie: Swan Lake, Miss.	26	Mar. 1	(3)	30.1	Mar. 21
Yazoo:				37.9	Mar. 2
Greenwood, Miss.	35	Mar. 1	8	37.4	Mar. 6
				37.3	Mar. 17
				37.3	Mar. 25
				37.3	Mar. 27
				35.6	Mar. 19, Mar. 20
Yazoo City, Miss.	29	Mar. 1	(3)	35.6	Mar. 23
				35.6	9
				35.4	14
Mississippi:				40.5	3–5
New Madrid, Mo.	34	Mar. 25	(3)	37.3	17–18
				37.5	24–26
Caruthersville, Mo.	32	Mar. 25	(3)	39.3	4–5
Memphis, Tenn.	34	2	15	36.5	8
Helena, Ark.	44	6	16	45.2	10–11
Red River Landing, La.	45	16	27	45.3	19–20
Baton Rouge, La.	35	14	May 1	35.8	19–22
Atchafalaya Basin					
Atchafalaya:					
Melville, La.	37	17	(3)	37.3	21–22
Atchafalaya, La.	25	Feb. 26	(3)	26.9	Mar. 13–18
				27.3	21–29
Morgan City, La.	[4] 6	11	16	6.8	13
		20	30	6.9	26
WEST GULF OF MEXICO DRAINAGE					
Sabine: Bon Wier, Tex.	17	16	20	19.5	18
Rio Grande:					
Lobatos Bridge, Colo.	4	22	24	4.2	23
Espanola, N. Mex.	7	19	25	7.3	21–24
GULF OF CALIFORNIA DRAINAGE					
Colorado Basin					
Animas: Durango, Colo.	4	17	17	4.2	17
		20	21	4.5	21

[1] Provisional.
[2] Continued at end of month.
[3] Upper Lock Gage datum.
[4] Flood stage or higher reached intermittently due to winds and tides.